

REMARKS

The Office Action dated October 1, 2003 has been carefully considered. First, Applicants note and appreciate the entry of the Declaration of the co-inventor Stefano Scialla submitted on September 22, 2003. The substance of the Declaration, taken with the following arguments and remarks is believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

Claims 1 and 4-15 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Specifically, the Examiner asserts that instant claims 1, 12 and 15 are vague and indefinite "because R₁ is initially defined as "aliphatic," which excludes any cyclic components, but then goes on to state that the aliphatic group may be a cyclic group."

This rejection is traversed and reconsideration is respectfully requested. Applicants submit that the use of "aliphatic" both in the specification at page 4, line 7, and as recited in claim 1, comports with a conventional classification scheme for organic compounds, and understood by ordinary practitioners in the art such that clarification is not required once "aliphatic" is defined, as it is here, to include cyclic non-aromatic structures. In organic nomenclature, compounds are commonly divided along broad, observable property lines into aromatics and non-aromatics, the latter of which are "aliphatic." While some classification schemes have separated alicyclics from the broader aliphatic category, "aliphatic" is still ubiquitously known and understood to be synonymous with "non-aromatic," which includes the alicyclics. See, for example, BarCharts, Inc. "Organic Chemistry", published in September 2001, a study guide for organic chemistry students wherein "aliphatic" is defined as "non-aromatic;" see also, Wade, L.G., Organic Chemistry, 4th Edition, published by

Prentice-Hall, Inc. 1999 at page 722 wherein the glossary defines an aliphatic compound as "An organic compound that is not aromatic." Copies of the relevant portion of these references are attached. Applicants explicitly define "aliphatic" in the specification to include cycloids in accord with this conventional terminology. The scope of the term "aliphatic" as used by Applicants is therefore determinable, rendering the claim language definite. Hence, the rejection of claims 1 and 4-15 under 35 U.S.C. § 112 is overcome and reconsideration is respectfully requested.

Claims 1 and 4-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,338,474 to Kaiserman et al. ("Kaiserman"), for reasons of record set forth in "Paper 4." In Paper No. 4, the Examiner asserts that Kaiserman teaches a bleaching system comprising a peracid bleach precursor and a lipase enzyme for hydrolyzing the peracid bleach precursor, wherein the bleach precursor may be any diacyl peroxide and that suitable diacyl peroxides include the same as those recited in the instant claims. The Examiner further asserts that Kaiserman teaches that the bleach release system may be employed or included within a variety of cleaning applications or formulations such as straight bleach products, pre-wash products, and various hard surface cleaners. In the present Office Action, the Examiner additionally contends that Kaiserman teaches that the system would be useful in normally basic aqueous solutions, relatively neutral solutions, and acidic solutions, and also teaches compositions with a pH of from about 3 to about 13. The Examiner concludes that it would have been obvious to formulate a bleaching composition having the specific pH containing a specific diacyl peroxide which provides stain removal and improved fabric color safety, with a reasonable expectation of success and similar results "because the broad teachings of Kaiserman suggest such a bleaching composition having the

specific pH containing a specific diacyl peroxide which provides stain removal and improved fabric color safety as recited by the instant claims."

Moreover, in his response to Applicants' prior arguments, the Examiner maintains that "the bleaching compositions as taught and suggested by Kaiserman would have the same stain removal and *fabric color safety properties* as recited by the instant claims because Kaiserman teaches methods of bleaching fabrics using compositions containing the same components in the same proportions as recited by the instant claims." (emphasis added).

This rejection is traversed and reconsideration is respectfully requested. Instant independent claim 1 is directed to a method for removing stains from fabrics and *improving fabric color safety* (emphasis added). The method comprises the step of contacting a soiled fabric with a bleaching composition. The bleaching composition comprises a diacyl peroxide (DAP) of a specifically recited formula, wherein R₁ is an aliphatic group having from 1 to 30 carbon atoms and is selected from either linear, branched, cyclic, saturated, unsaturated, substituted, unsubstituted or mixtures thereof, and R₂ is an aromatic group selected from mono or polycyclic ring, homo or heteroatomic, substituted or unsubstituted or mixtures thereof. The composition has a pH of between about 2 to about 5.

Kaiserman, on the other hand, is directed to systems for releasing peracid from peroxygen bleaching sources using a lipase enzyme as the activator (see abstract). The broadest disclosure in Kaiserman, arguably not enabled by the significantly narrower teachings of the specification, is found in claim 1 wherein Kaiserman recites a composition for releasing bleach peracid in the wash comprising: (a) a DAP of a general structure with R and R₁ being the same or different, selected from the group consisting of saturated or unsaturated alkyl having 1 to 20 carbon atoms, aryl and alkaryl, and (b) a lipase enzyme used in an amount such that the final composition has a lipolytic enzyme activity of from 100 to

0.005. The lipase enzyme reacts with the DAP to release a peracid in the wash. The Kaiserman specification exclusively teaches aryl/aryl DAPs, fails to suggest or provide any motivation for aliphatic/aromatic DAPs, and provides nearly 20 specific composition examples, none of which could be used in the instantly claimed method for, inter alia, improving color safety, as it is well-known that such aryl/aryl DAPs commonly cause color damage.

Applicants submit that the specificity of the instant compositions, the breadth of the Kaiserman disclosures, and the non-utility of *ALL* of the compositions specifically disclosed in Kaiserman for Applicants' purposes are convincing of the patentability of the instant claims over Kaiserman.

Applicants contend that the breadth in scope of Kaiserman with respect to the DAPs results in little or no suggestion to the ordinary practitioner that a limited number of DAP compositions within that scope might be employed for the very specific end use of removing fabric stains while improving color fabric safety as taught by Applicants. Further, because the present inventive compositions are directed toward a specific end use which overcomes the color fabric deficiencies inherent in the vast majority of Kaiserman's diacyl compositions, they are not obvious to one of ordinary skill in the art and constitute a significant advance over and above the teachings of Kaiserman.

Applicants do not dispute the fact that the generic diacyl peroxide recitation of Kaiserman encompasses the specific aliphatic-aromatic peroxides of the present invention. However, Applicants submit that there is no suggestion in Kaiserman to select aliphatic-aromatic peroxides from the enormous number of diacyl peroxides covered by the general formula. The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious. *In re Jones*, 958 F.2d 347, 350, 21

USPQ2d 1941 (Fed. Cir. 1992) (rejecting the Commissioner's argument that "regardless [] how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it"). "The broad teachings of a reference cannot preclude establishment of unobviousness for a specifically claimed invention not anticipated by the reference." *In re Orfeo*, 169 USPQ 487 (CCPA 1971); *In re Waymouth*, 182 USPQ 290 (CCPA 1974); *In re Meyer*, 202 USPQ 175 (CCPA 1979).

In the instant case, the generic diacyl peroxide formula disclosed in Kaiserman contains an enormous number of potential variants. The present specification teaches that diacyl peroxides are known in the art as commonly employed bleach precursors and that diaryl peroxides, specifically benzoyl peroxides, do not fall within the scope of the present inventive method because they are well-known as being *unsafe to fabric colors*. The intent of the present invention is to provide consumers with a superior alternative to diaryl peroxides in terms of *improving fabric color safety* while retaining the well-known stain removal efficacy. Applicants point out that the only diacyl peroxide specifically disclosed and explicitly "preferred" by Kaiserman is benzoyl peroxide, which simply CANNOT function for the purpose intended by the present invention (column 2, lines 60-61; column 3, lines 66-67 and column 4 lines 1-13). While the general Kaiserman formula unquestionably encompasses aliphatic-aromatic peroxides when specific variables are chosen, there is nothing in the disclosure of Kaiserman suggesting that one should select such variables. Indeed, Kaiserman appears to teach away from the selection of aliphatics by empirically focusing on di-aromatic peroxides exclusively, including benzoyl peroxide and substituted benzoyl peroxides (see Examples, particularly "peroxide substrates" of Example 4 which are all substituted benzoyl peroxides). Kaiserman teaches that in preferred diacyl peroxides, both R and R₁ are phenyl (column 2 lines 60-61). Kaiserman further states that the aryl in the

preferred diacyl peroxide is benzoyl. Seventeen exemplary compositions are disclosed in the Kaiserman specification. None of them, or any of the other DAPs preferred by Kaiserman is or suggests an aliphatic-aromatic peroxide.

The Examiner repeatedly asserts that the compositions of Kaiserman could be employed for the presently recited method, because the breadth of DAPs recited by Kaiserman theoretically includes the specific DAPs presently taught, and therefore would inherently serve the same purpose. But, it is well-established case law that inherency and obviousness are entirely different concepts. *In re Rinehart* 189 USPQ 143, 148 (CCPA 1976). "The view that success would have been 'inherent' cannot, in this case, substitute for a showing of reasonable expectation of success. *Id.* There is no teaching in Kaiserman of the presently recited benefit of improving color safety, and Kaiserman contains no disclosure of any composition that confers such a benefit.

The Examiner appears to be saying that a generic disclosure prohibits a finding of patentability for a species subset that offers a property and utility distinct from the genus. Here, Kaiserman broadly recites nearly all DAPs, merely for their role as bleach precursor enzyme substrates. Applicants, however, surprisingly discovered that a selection of DAPs such that one is aromatic and one is aliphatic yields a previously unknown and highly desirable characteristic - improved fabric color safety. While Kaiserman may suggest certain di-aryl peroxides, Kaiserman does not describe or suggest aliphatic/aromatic peroxides, and does not teach or suggest methods for providing fabric color safety, and therefore does not motivate the selection of DAPs presently recited.

"[A] reference must be considered not only for what it expressly teaches, but also for what it fairly suggests." *In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979). Given the vast number of DAPs encompassed by the generic DAP formula disclosed

in Kaiserman, and the fact that the DAPs that Kaiserman specifically discloses to be "typical," "preferred," and "optimum" are different from and cannot be used to achieve the presently recited method of fabric color safety, Kaiserman cannot be said to teach or fairly suggest the selection of aliphatic/aromatic DAPs. *See In re Belle* 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993) (DNA sequence would not have been obvious in view of prior art reference suggesting a nearly infinite number of possibilities and failing to suggest why among all those possibilities one would seek the claimed sequence). A disclosure of millions of variants of a compound does not render obvious a claim to some subset, particularly when that disclosure indicates a preference leading away from the claimed compounds. *See In re Baird*, 29 USPQ2d 1550 (Fed. Cir. 1994) (emphasis added).

In summary, it is Applicants' position that the Kaiserman patent is so broad in scope as to render little or no suggestion to the artisan that a limited number of compositions within that scope may be employed for the instantly taught very specific end method of stain removal and improved color safety. The §103 rejection of claims 1 and 4-15 are therefore overcome and reconsideration is respectfully requested.

Claims 1 and 4-15 are additionally rejected under 35 U.S.C. §103(a) as being unpatentable over WO No. 98/03621 to Ofosu-Asante ("Ofosu"), for the reasons of record set forth in Paper No. 4. Additionally, the Examiner asserts that with respect to claim 13, the broad teachings of Ofosu suggest a surfactant system in which one is hydrophobic with an HLB less than 9 and one is hydrophilic with an HLB greater than 10.

In paper No. 4, the Examiner asserted that Ofosu teaches a method for treating fabrics comprising the steps of contacting, in the presence of water or a solvent which generates heat under microwave radiation, a fabric with a treating composition comprising an effective bleaching agent, and subjecting the fabric to microwaves for a sufficient period to effectively

treat the fabric. The Examiner further asserted that suitable treating compositions contain from about 0.1 to about 60% of a bleaching agent which may be a diacyl peroxide having the same general formula as instantly recited. The Examiner admits that Ofosu fails to teach a method of using a specific DAP to provide stain removal and improved fabric color safety as instantly recited, but that it would have been obvious to one of ordinary skill in the art to formulate a composition containing a specific DAP which provides stain removal and improved color safety because the "broad teachings" suggest such a bleaching composition.

This rejection is traversed and reconsideration is respectfully requested. The instant inventive bleaching compositions employ specific DAPs which have been discovered by Applicants to provide the efficacious fabric stain removal of well-known DAP formulations while improving fabric color safety.

Ofosu, on the other hand, teaches methods for stain removal on fabric with detergent compositions containing bleach. The Ofosu methods comprise contacting the fabrics, in the presence of a solvent that generates heat under microwave radiation, with a treating composition comprising a bleaching agent, and subjecting the fabric to microwaves for a sufficient period to effectively treat the fabric. The disclosed bleaching agents of Ofosu include diacyl peroxide, and diaryl peroxides, including dibenzoyl peroxide as well as 6 other aryl-aryl DAPs, and the single aryl-alkyl DAP, benzoyl succinyl. According to the teachings of Ofosu, the R substituents can be the same or different and the compositions have a neat pH of from 3 to 10 such that the DAP remains undissolved.

Ofosu fails to consider or disclose methods or compositions directed to improving fabric color safety. In fact, most of the disclosed Ofosu DAPs are of the aryl-aryl moiety which is known to be damaging to fabric color safety. Ofosu's invention, which is directed to "stain removal", and which is disclosed as particularly efficacious on stains such as tomato

and tea stains, is intended to *remove* coloring agents. The novelty of Ofosu is in the exposure of the treated fabric to microwaves in order to enhance the stain removal activity of the bleach. There is no teaching or suggestion that these compositions improve fabric color safety. In fact, Ofosu teaches away from considerations of fabric color safety by requiring the application of microwaves, a form of very high energy radiation which is commonly known to often discolor and degrade fabrics.

Applicants draw the Examiner's attention to the examples of the Ofosu specification. The examples directed to laundry detergents specifically comprise aryl-aryl DAPs. Only a single suggested DAP, benzoyl succinyl peroxide, is suggested by Ofosu and it is disclosed in the specification as one of 8 possible DAPs, the others all being aryl-aryl. It is very significant that even this single disclosure of an aliphatic-aromatic DAP is made in the context of *dishwashing*, and not fabric care. Applicants submit that the Ofosu disclosure of the single mixed DAP species only in the context of dish washing and hard surface cleansers cannot provide the motivation to employ aliphatic-aromatic DAPs for stain removal and improving color safety of textile products, particularly when its inclusion in the dishwashing detergent is unrelated to color safety.

Applicants draw attention to the Declaration of co-inventor Stefano Scialla submitted on September 22, 2003, and the evidence of general knowledge within the industry previously submitted. As discussed in paragraph 3 of the Declaration, the documents attached thereto evidence that diaromatic peroxides, in particular, benzoyl peroxide, have the well-known property of being damaging to fabrics in general, and color fabrics in particular. For example, "Drycleaning", published by the Better Business Bureau, page 4, para. 4, states "[s]kin care preparations containing benzoyl peroxide also require special care in use. Benzoyl peroxide is a bleaching agent and can cause permanent areas of color loss on towels

and clothing"; and (2) "Chemical Spots, Stains and Discoloration of Home Furnishings, published by the Nebraska Cooperative Extension, pages 2 and 3, relevantly states, *inter alia*, "Benzoyl peroxide is a strong oxidizing and/or bleaching agent which is capable of destroying most dyes used in carpet and upholster fabrics. Other textiles such as pillowcases, sheets, towels and clothing may be affected also. *Manufacturers have estimated that a high percentage of unidentifiable spots on carpets can be attributed to this chemical.*" These documents provide direct evidence that harshness of benzoyl peroxide with respect to fabric color safety is commonly known by ordinary practitioners of detergent arts.

The Declaration further evidences experimental results obtained by the present inventors which show that the instantly claimed DAPs, i.e. necessarily mixed aryl-alkyl DAPs, and the methods which utilize compositions comprising them, are patentably distinguishable because they afford good fabric color safety (see Decl. paras 4-6).

The Examiner asserts that the Declaration filed under 37 CFR 1.132 is unpersuasive because it provides no factual evidence or data showing that the compositions of the instant claims provide unexpected and superior results in comparison to those compositions falling outside the scope of the claimed invention. Applicants submit that the Examiner misunderstood the purpose of the Declaration, which was to demonstrate that the present inventors relied upon common knowledge in the art with respect to the fabric color-damaging effects of the commonly employed diaryl peroxides. Applicants never intended the Declaration as constituting rebuttal evidence as it is Applicants contention that the Examiner has failed to set forth a *prima facie* case of obviousness.

Applicants submit that the documents submitted previously highlight the patentably distinguishable features of the present inventive methods for the Examiner. Applicants fail to see where the Ofosu disclosure, which teaches random DAP substituents and, in the context

of laundry, only teaches aryl-aryl DAPs, can provide the basis for an obviousness rejection of the instant invention. Applicants repeat, for emphasis, that the instant methods are patentably distinguishable from Ofosu because they utilize compositions which mandate mixed substituent combinations in the DAP, and because they improve color safety. Neither of these limitations is found in the cited reference.

To establish *prima facie* obviousness of the claimed invention, all the claim limitations must be taught or suggested by the prior art, *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). Furthermore, references relied upon to support a rejection under 35 U.S.C. §103 must provide an enabling disclosure, i.e., they must place the claimed invention in the possession of the public, *In re Payne*, 203 U.S.P.Q. 245 (CCPA 1979). The rejection should therefore be reversed. Ofosu provides absolutely no teaching or suggestion of methods for laundering which provide fabric color safety, and, in fact, inherently teaches the opposite. Hence, the rejection under 35 U.S.C. § 103 of claims 1 and 4-15 over Ofosu is overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the rejections under 35 U.S.C. § 112, second paragraph, and 103(a) and places the application in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Respectfully submitted,

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